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WRITTEN DECISION
OF THE INTERNATIONAL
EXAMINATION AUTHORITY (SUPPLEMENTARY SHEET)

International file reference

PCT/EP2004/005193

Re. Point V.

1 This decision makes reference to the following documents:

D1 : EP 1 184 570 A (NUOVO PIGNONE SPA) 6 March 2002 (2002-03-06)

D2 : EP 0 410 317 A (LIBERTY TECH CENTER) 30 January 1991 (1991-01-30)

2 INDEPENDENT CLAIM 1

2.1 Regardless of the lack of clarity mentioned below (see point VIII and underlined sections) the object of claim 1 is in any event not novel in the sense of Article 33(2) PCT, so that the requirements of Article 33(1) PCT are not met.

2.2 document D1 (column 4, line 22 - column 5, line 52, Fig. 1 - 3) discloses (the references in brackets relate to this document): A diagnostic system for a valve, especially a check valve of a positive displacement pump, with at least one solid-borne sound sensor (12), with a device (22, 24, 26, 28, 16; Fig. 1) for evaluating at least one recorded solid-borne sound signal and with means (24) for determining the state of the valve, through which it can be at least be determined whether the valve () is in the open or closed state is with a first value of a characteristic value () of a sound signal recorded in the closed state of a valve () can be determined,
essentially at the same time a second value of a characteristic value () of a sound signal recorded in the open state of this same valve () and/or of a valve operated in a comparable environment () is determined and can be output with a signal (see 16, Fig. 1) for display of a fault, if the deviation of the first value from the second value exceeds a predetermined threshold value (see column 5, lines 15 - 47, Fig. 1 - 3).

2.3 The underlined features which relate to a method for use of the diagnostic system (see point VIII), are not known from document D1 but would however also be able to be executed according to the circumstances with the diagnostic system in accordance with D1 in any event. The diagnostic system in accordance with D1 is thus thoroughly suitable for executing this type of method.

2.4 Document D2 also discloses (see the corresponding points in the text specified in the examination report and point VIII) all features of this claim.

3 INDEPENDENT CLAIM 4

3.1 Document D1 is viewed as the closest prior art. It discloses (the references in brackets relate to this document): Diagnostic method for a valve, especially a check valve of a positive displacement pump, with at least one solid-borne sound sensor (12), with a device (14) for evaluating at least one recorded solid-borne sound signal and with means (16) for determining the state of the valve, through which it can be at least established whether the valve (2) is in the open or closed state.
from which the object of the independent claim 4 differs in that:
a first value of a characteristic value of a sound signal recorded in the closed state of a valve is determined, essentially at the same time a second value of a characteristic value of a sound signal recorded in the open state of the same valve and/or of a valve operated in a comparable environment is determined and a signal for indicating a fault is output if the deviation of the first value from the second value exceeds a predetermined threshold value.

3.2 The object of claim 4 is thus novel (Article 33 (2) PCT).

3.3 The object to be achieved with the present invention can thus be seen as specifying a diagnostic method which reacts less sensitively to variations in the system noise.

3.4 Applying the concept of claim 4 to a method in accordance with D1 is not known in the prior art determined.

4 DEPENDENT CLAIMS 2,3

Claims 2, 3 do not contain any features, which in combination with the features of any claim to which they relate, fulfill the requirements of the PCT in relation to novelty or inventive step, see point VIII, documents D1 and D2 and the corresponding section of text specified in the examination report.

Re. Point VIII.

1. The application does not fulfill the requirements of Article 6 PCT, since claim 1 is not clear.

1.1 As set down below, a few of the features in the device claim 1 relate to a method for using the device and not to the definition of the device on the basis of its technical features. The intended restrictions, in contradiction to the requirements of Article 6 PCT, thus do not emerge clearly from the claim.

1.2 The following functional specifications do not make it possible for a person skilled in the art to establish which features are necessary to execute the specified functions:
A first value of a characteristic value (L1) of a sound signal recorded in the closed state of a valve (8) can be determined, essentially simultaneously with this, a second value of a characteristic value (L2) of a sound signal recorded in the open state of the same valve(8) and/or of a valve (9)

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operated in a comparable environment is determined and that a signal (31) can be output for displaying the fault if the deviation of the first value from the second value exceeds a predeterminable threshold value (30).